REMARKS

Reconsideration and withdrawal of all grounds of rejection are respectfully requested in view of the above amendments and the following remarks. Claims 1-7, 10-14, 16-18, 20-22 and 24-28 were rejected. By this Amendment, claims 1, 10, 16, 20 and 28 have been amended. New claims 29-33 have been added. No claims have been cancelled by this amendment. Consequently, claims 1-7, 10-14, 16-18, 20-22 and 24-33 are now pending.

The Examiner has rejected claim 1 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description. The Examiner has asserted that claim 1 contains subject matter which was not described in the specification is such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner has objected to the limitations "probability model" and "essentially complete group." The limitation "model" and its essential role within the invention is well discussed in Applicants' specification at page 2, lines 15-20:

> "Embodiments of the invention provide for advantages not found within the prior art. Because the prediction is made based on models derived from groups, embodiments can be scaled to data that is voluminous, since the data is first consolidated into group and models are used to derive predictions, requiring less memory. Thus, even if the size of the database is very large, accurate predictions can still be accomplished, while still maintaining performance." (emphasis added)

The above section adequately conveys to one skilled in the art the term "model" used in association with probability activities. Further, by way of example, the term "probability model" is adequately conveyed several places in the specification, including on page 12, line 15 to page 12, line 1. Regarding the limitation "essentially complete group," claim 1 has been amended to delete this limitation. The Examiner will note that independent claims 10, 16, 20 and 28 have been similarly amended. Therefore, withdraw of this objection is respectfully requested.

The Examiner has rejected claims 1-6 and 24 under 35 U.S.C. § 103(a) as being unpatentable over the Breese et al. reference in view of WO Patent No. 98/02835 to Post et al.

Independent claim 1 is directed to a computer-implemented process. As pending, claim 1 reads as follows:

> 1. (currently amended) A computer-implemented method comprising:
>
> consolidating data organized into records and items, such that each record has a value for each item, into a plurality of groups summarized by a plurality of probability models derived from item values;
>
> based on the plurality of groups, determining a predicted vote for a particular record and a particular item using a similarity scoring approach that reflects likelihood similarity between ~~at least~~ one probability model that ~~characterizes an essentially complete~~ summarizes one group of the plurality of groups and the particular record; and
>
> outputting the predicted vote for the particular record and the particular item.

Referring now to the primary reference, Breese et al. (Empirical Analysis of Predictive Algorithms for Collaborative Filtering) discusses a method of determining consumer preference by applying collaborative filtering or recommender system techniques to a database. An exemplary database contains user preference data concerning a collection of individual users. Clearly, Breese et al. does not teach nor suggest the limitation recited in pending claim 1 of "a similarity scoring approach that reflects likelihood similarity between one probability model that summarizes one group of the plurality of groups and the particular record."

The Examiner has cited a secondary reference (Post et al.), asserting that it teaches the similarity scoring approach recited in claim 1 of the present application. Post et al. is directed to a method and apparatus for expertly matching products, services and consumers. The published application reports to have four primary components, i.e., "user input, comparison system, database and display." (Post et al., page 3, lines 8-9). The Abstract further states the "computer-driven system creates, accesses, and processes data from databases related to products, services, providers, and the like. Boolean, fuzzy, rule-based, and knowledge based logic, expert systems, expert interaction and/or expert intervention are used to achieve results." For the reasons that follow, Applicants' undersigned representative respectfully submits that Post et al. is no more relevant to claim 1 than the primary reference.

The Examiner has cited a general discussion of "group embodiments" in the secondary reference. (Post et al., page 40, lines 14-19). Applicants' undersigned representative readily admits that Post et al. teaches the idea of categorizing an individual user into a group based on a user's "answers to questions which allow the user to be put into a category." (Post et al., page 40, lines 4-5). Further, the undersigned acknowledges Post et al. also teaches using data of the group into which the user is placed as a substitute for data of the specific individual. However, this is not the Applicants' invention. By way of example, Post et al. merely teaches that when a 16 year old girl from Illinois enters data into a retailer's customer assistance system, any subsequent predictions made by the system would be based upon data associated with teenage girls living in Midwestern States, rather based upon data associated with all customers in the database. Clearly, Post et al. does not teach or suggest the use of a group probability model in predicting the vote of a group member as recited in claim 1. This distinction is significant because, as detailed in the Applicants' specification, the model reduces required memory while maintaining accurate predictions. (Specification, page 2, line 18). Further, the invention sought to avoid increased response times caused by increased database size. (Specification, page 2, lines 1-3). Post et al. also does not teach nor suggest the use of the item values of a group to create a probability model. This feature of the present invention is important because Applicants' process can pre-calculate the model and, by using use the model, more rapidly determine a similarity as compared to the Post et al. process that relies upon data of the entire group.

For at least the reasons provided above, the teaching of Post et al. in combination with Breese et al. does not define the invention of the Applicant and therefore, the cited combination does not render claim 1 obvious. Further, it is submitted that claims 2-6 and 24 are patentable at least by virtue of dependence on claim 1. Therefore, withdrawal of this rejection is respectfully requested.

The Examiner has rejected claim 10-14 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Breese et al. in view of Post et al. Claim 10 features a computer-readable medium based on claim 1 and all the arguments presented above with regard to claim 1 are appropriate for this claim. Accordingly, this claim is allowable. Claims 11-14 and claim 25 depend from allowable claim 10 and are also allowable.

The Examiner has rejected claim 16-17 and 26 under 35 U.S.C. § 103(a) as being unpatentable over Breese et al. in view of Post et al. Claim 16 recites a computer-implemented method operable on data organized into records and items. This claim features the recitation of clusters rather than groups. All the arguments presented above with regard to claim 1 apply to clusters and are therefore appropriate for this claim. Consequently, the subject matter of claim 16 is neither shown nor suggested either alone by the Breese et al. reference or by the Breese et al. reference in combination with the Post et al. Therefore, independent claim 16 and dependent claims 17 and 26 are allowable.

The Examiner has rejected claim 20-21 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Breese et al. in view of Post et al. Claim 20 features a computer-implemented method operable on data organized into records and items, so that each record has a value for each item, and further consolidated into a plurality of descriptors. Based on the descriptors, a vote is determined for a particular record and a particular item using a correlation similarity scoring approach that finds a similarity between the particular record and one probability model that characterizes one descriptor of the plurality of descriptors, wherein the probability model is derived from attributes of the one descriptor. The predicted vote for the particular record and the particular item is provided as an output. For at least one reason given above in regard to claim 1, these features are neither shown nor suggested by Breese et al either alone or in combination with Post et al. Therefore, claim 20 and dependent claims 21 and 27 are allowable.

The Examiner has rejected claim 28 under 35 U.S.C. § 103(a) as being unpatentable over Breese et al. in view of Post et al. Claim 28 is modeled after allowable claim 1. Claim 28 recites, however, that a similarity scoring approach featured in the claim reflects correlation similarity between one group of the plurality of groups and a particular record. This claim is neither shown nor suggested by the Breese et al reference either alone or in combination with the Post et al. reference and therefore this claim is allowable.

The Examiner has rejected claims 7, 18 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Breese et al., further in view of Post et al., and further in view of EP 0751471 A1 to Lashkari et al. Claims 7, 18 and 22 are allowable at least by virtue of dependence on

allowable independent claims 1, 16 and 20, respectively. Therefore, withdrawal of this rejection is respectfully requested.

New claims 29-33 have been added. These new claims recite features regarding the probability model recited in independent claims 1, 10, 16, 20 and 28, respectively. Support for these recitations is found at page 11 of the present application. Neither Breese et al. nor Post et al. teach the use of a group model, nor what particular attributes of the group would define the model. Consequently, these claims are allowable. Further, these claims are allowable at least by virtue of dependence on allowable claims 1, 10, 16, 20 and 28.

In view of the above, it is respectfully submitted that the invention of independent claims 1, 10, 16, 20 and 28 is patentable. Further, the subject matter of the remaining dependent claims is patentable at least by virtue of dependence on claims 1, 10, 16, 20 and 28. Therefore, it is believed that all pending claims of this application are in condition for allowance. Accordingly, entry of the Amendment and a subsequent early Notice of Allowance for all pending claims of this application is respectfully solicited.

Respectfully submitted,

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